



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade (Cycle III)
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

SMART IOT APPLICATIONS

III YEAR/ V SEMESTER

UNIT 3 –SMART INDUSTRIAL AND AGRICULTURAL APPLICATIONS

TOPIC-1 LOGISTICS: QUALITY OF SHIPMENT CONDITIONS, ITEM LOCATION



Challenges in Traditional Logistics



Lack of Visibility

Difficulty tracking shipments in real-time and monitoring environmental conditions.



Operational Inefficiencies

Challenges in accurately locating items and optimizing workflows.



How IoT Transforms Modern Logistics



Real-Time Data Capture

IoT sensors collect vital data on shipment conditions and locations.

Automated Monitoring

IoT enables remote tracking and optimization of logistics operations.

Improved Visibility

Enhanced transparency throughout the supply chain.



Smart IoT Devices for Logistics



Temperature

Monitor perishable goods and prevent damage.



Humidity

Ensure optimal storage conditions for sensitive items.



GPS Tracking

Pinpoint real-time location of shipments.



Vibration

Detect impacts that could damage cargo.



Monitoring Shipment Conditions with IoT



1

Real-Time Alerts

Instantly notify of temperature, humidity, or vibration issues.

2

Environmental Data

Continuously track and analyze shipment conditions.

3

Proactive Responses

Intervene early to prevent damage or spoilage.





Precise Item Location Tracking



1

GPS Monitoring

Track shipments in real-time with GPS.

2

RFID Tagging

Locate individual items with RFID technology.

3

Delivery Optimization

Improve delivery time estimates and reduce losses.





IoT in Supply Chain Management



Enhanced Transparency

Visibility into every stage of the supply chain.

Operational Efficiency

Streamline workflows and reduce operational costs.

Data-Driven Decisions

Leverage real-time insights for smarter business choices.



Predictive Maintenance and Damage Prevention



1 Early Issue Detection

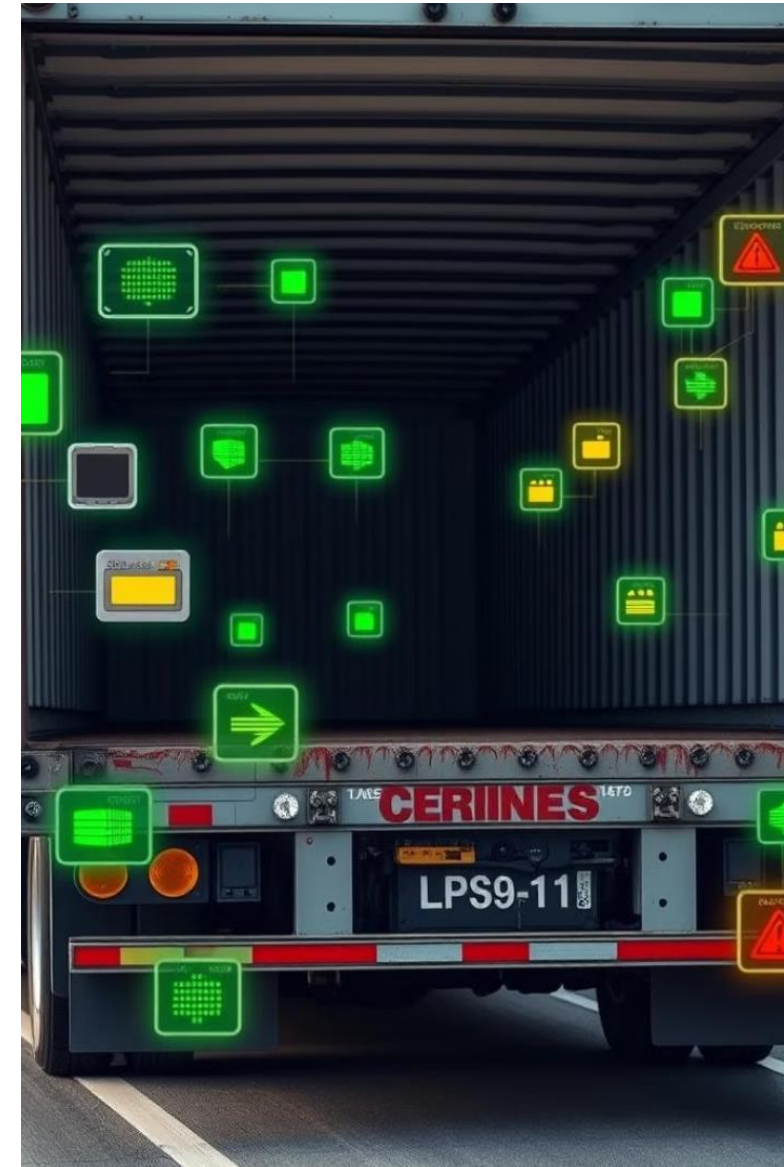
IoT sensors spot potential mechanical failures early.

2 Proactive Interventions

Real-time alerts enable timely preventative actions.

3 Reduced Downtime

Minimize delays and avoid costly damages.





Case Study: IoT in Logistics



Enhanced Visibility

Increased shipment tracking and condition monitoring.

Operational Improvements

20% reduction in delivery times and damages.

Cost Savings

Achieved 15% decrease in logistics operational costs.

Customer Satisfaction

Improved on-time delivery and reduced complaints.





The Future of IoT in Logistics



Autonomous Solutions

AI-driven logistics with self-driving trucks and drones.



Blockchain Integration

Enhanced security and traceability across the supply chain



Assessment



1. How do IoT sensors help monitor the quality of shipment conditions during transit?
2. What technologies are commonly used for location tracking in IoT-enabled logistics systems?
3. What are the potential consequences of not monitoring shipment conditions in real-time?
4. How do these technologies enhance the efficiency of the supply chain?
5. What are the key benefits of using IoT to track both the location and condition of shipments in a logistics system?



THANK YOU